

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/044999 A2

(51) International Patent Classification: **C12N**

(21) International Application Number:
PCT/US2004/037201

(22) International Filing Date:
5 November 2004 (05.11.2004)

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
60/517,624 5 November 2003 (05.11.2003) US

(71) Applicant (for all designated States except US): **NEW ENGLAND MEDICAL CENTER HOSPITALS, INC.**
[US/US]: **NEMCH** Box 817, 750 Washington Street,
Boston, MA 02111 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FOSS, Francine, M.** [US/US]: 44 Whittier Road, Wellesley, MA 02481 (US). **XIE, Yong** [US/US]: 27 Grant Avenue, Belmont, MA 02478 (US).

(74) Agents: **MEIKLEJOHN, Anita, L. et al.**; Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110-2804 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **TREATMENT WITH IMMUNOREGULATORY T CELLS**

(57) Abstract: Methods and compositions are provided for the treatment of an autoimmune disease. The methods include administering immunoregulatory T cells (T_{reg}) to patients. The therapeutic T_{reg} can express the CD25, CD4, and/or ICOS antigens. The therapeutic T cells can be CD25⁺ ICOS⁺, CD4⁺ ICOS⁺, and/or CD25⁺ CD4⁺ ICOS⁺, and they can be provided by a donor.

BEST AVAILABLE COPY